

## CORRESPONDENCE

# Review of the genus *Neolarnaca* Gorochov, 2005 (Orthoptera: Gryllacrididae) from China

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**Abstract** The genus *Neolarnaca* is firstly recorded to raspy cricket fauna of China. A new species and a new subspecies are described: *N. longipenna* **sp. nov.** and *N. vera aurelostria* **subsp. nov.** Illustrations of the morphological structures are given and a key to the species of the genus is provided. All specimens observed are deposited in the Museum of Hebei University.

**Key words** New recorded genus, new species, new subspecies, Chinese fauna.

The genus *Neolarnaca* was established by Gorochov (2004) with monotypic, *N. vera* as type species. Comparing with *Larnaca* Walker, 1869, it was characterized as following: tegmina longer than pronotum; fore and median tibiae with long ventral spurs; abdominal stridulatory teeth present; male ninth abdominal tergite with a pair of spines, which downwards and forwards pointing. For the genus *Larnaca*, the tegmina is shorter than the pronotum, the stridulatory area is absent and the ninth abdominal tergite splits as a pair of crossed hooks which downwards and laterally pointing (Bian *et al.*, 2015).

In this paper, the genus *Neolarnaca* is firstly recorded from China. A new species and a new subspecies of the genus are found, namely *N. longipenna* **sp. nov.** and *N. vera aurelostria* **subsp. nov.** In addition, a key to the species of *Neolarnaca* is provided.

Morphological structures were examined and measured using Leica M205A stereomicroscope. Photographic images were made using Leica DFC 450 digital imaging system. Scales in images are captured under the similar condition with each figure of morphological feature. Specimens were deposited in dry way. All the examined samples are deposited in the Museum of Hebei University. The terminology follows Rentz (1990).

### *Neolarnaca* Gorochov, 2004 New record to China

*Neolarnaca* Gorochov, 2004: 913. Type species: *Neolarnaca vera* Gorochov, 2004, by original designation.

Generic diagnosis. Body medium-sized. Fastigium verticis broad, about 1.5–1.8 times the width of scape. Occiput smooth. Antennal scape elongated. Eyes prominent; ocelli small, nearly circular. Pronotum black, with anterior margin slightly projected medially, posterior margin nearly straight; lateral lobes longer than height with ventral margin oblique, without humeral sinus. Fore coxae with 1 small spine. Fore and median femora unarmed spine on ventral surface; hind femora armed with small ventral spines, genicular lobes with apices obtuse. Fore and median tibiae with 4 pairs of ventral spurs and 1 pair of ventral apical spurs, the apices of median tibiae with 1 inner dorsal spur; hind tibiae with 1 row of dorsal spines, 1 pair of dorsal apical spurs, 1 pair of ventral subapical spurs and 2 pairs of ventral apical spurs. Abdominal stridulatory teeth very sparse, appearing as a single row on the second abdominal tergite, which a widely spaced, and as double rows parallelly distributed on third abdominal tergite. Tegmina well developed, longer than pronotum, reaching apex of abdomen. Male ninth abdominal tergite densely bearing hairs, with 1 pair of long spines, which downwards and forwards pointing; integument of ninth abdominal tergite nearly membranous; tenth abdominal tergite short, membranous;

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subgenital plate simple with developed styli. Female larger than male in size, subgenital plate with membranous basal area and slightly sclerotized at the middle; ovipositor short, strongly upcurved, hook-shaped.

Up to now, only one species of the genus is known from Vietnam (Tam Dao Vill., Vinh Phu Prov.; Gorochoy, 2004; Eades *et al.*, 2015). It's mainly distributed in primary forest, at elevation of 800–900 meters. A new species and a new subspecies of the genus are described herein.

Distribution. China, Vietnam.

**Key to species of the genus *Neolarnaca* Gorochoy.**

1. Tegmina long, almost reaching apex of abdomen; pronotum with 1 narrow median stripe (Figs 9, 16).....*N. longipenna* sp. nov.  
Tegmina short, just reaching posterior margin of third abdominal tergite ..... 2
2. Pronotum with narrow stripe along with anterior margin and small brownish spot at the middle of posterior margin .....  
.....*N. vera vera* Gorochoy, 2004  
Pronotum with 1 wider brownish stripe along with the midline, which broaden at the anterior margin and posterior margin (Fig. 2)  
.....*N. vera aurelostria* subsp. nov.

***Neolarnaca vera aurelostria* subsp. nov.** (Figs 1–7)

Male. Body medium-sized. Micropterous. Fastigium verticis about 1.8 times the width of scape, lateral margins not raised (Fig. 1). Eyes elongate, oval. Ocelli small, subcircular. Scape equal to the length of eyes, but shorter than pedicel and first segment of flagellum combined; pedicel as long as first segment of flagellum. Pronotic anterior margin slightly projected and posterior margin almost straight; lateral lobes longer than height (Figs 2–3). Fore coxae with 1 small spine. Fore femora absent; median femora unarmed spines on ventral surface; hind femora with 4–5 inner and 4–6 outer spines on ventral surface. Median tibiae with 1 inner dorsal spur and 5 pairs of ventral spurs (including 1 pair of apical spurs), the apical ones obviously shorter than the others (Fig. 5). Hind tibiae with 6 pairs of dorsal spines, 1 pair of dorsal apical spurs, 2 pairs of ventral apical spurs and 1 pair of ventral subapical spurs. Tegmina reaching the posterior margin of third abdominal tergite. Hind wings shorter than tegmina. Second abdominal tergite with 1 row of oblique stridulatory teeth; third abdominal tergite with 2 parallel rows of stridulatory teeth (Fig. 4). Ninth abdominal tergite with 1 pair of spines, which downwards and forwards pointing, its apex acute (Fig. 7). Tenth abdominal tergite membranous. Cerci short, nearly cylindrical. Anterior margin of subgenital plate almost straight, posterior margin with 1 triangular concavity in the middle. Styli stout, cylindrical, apices obtuse (Fig. 6).



Figures 1–7. *Neolarnaca vera aurelostria* subsp. nov., male. 1. Head, frontal view. 2. Head and pronotum, dorsal view. 3. Pronotum and tegmina, dorsal view. 4. Head, pronotum and tegmina, lateral view. 5. Middle tibia, dorsal view. 6. Subgenital plate, ventral view. 7. Apex of abdomen, apico-ventral view. Scale bars: 1–5 = 2 mm; 6–7 = 1 mm.

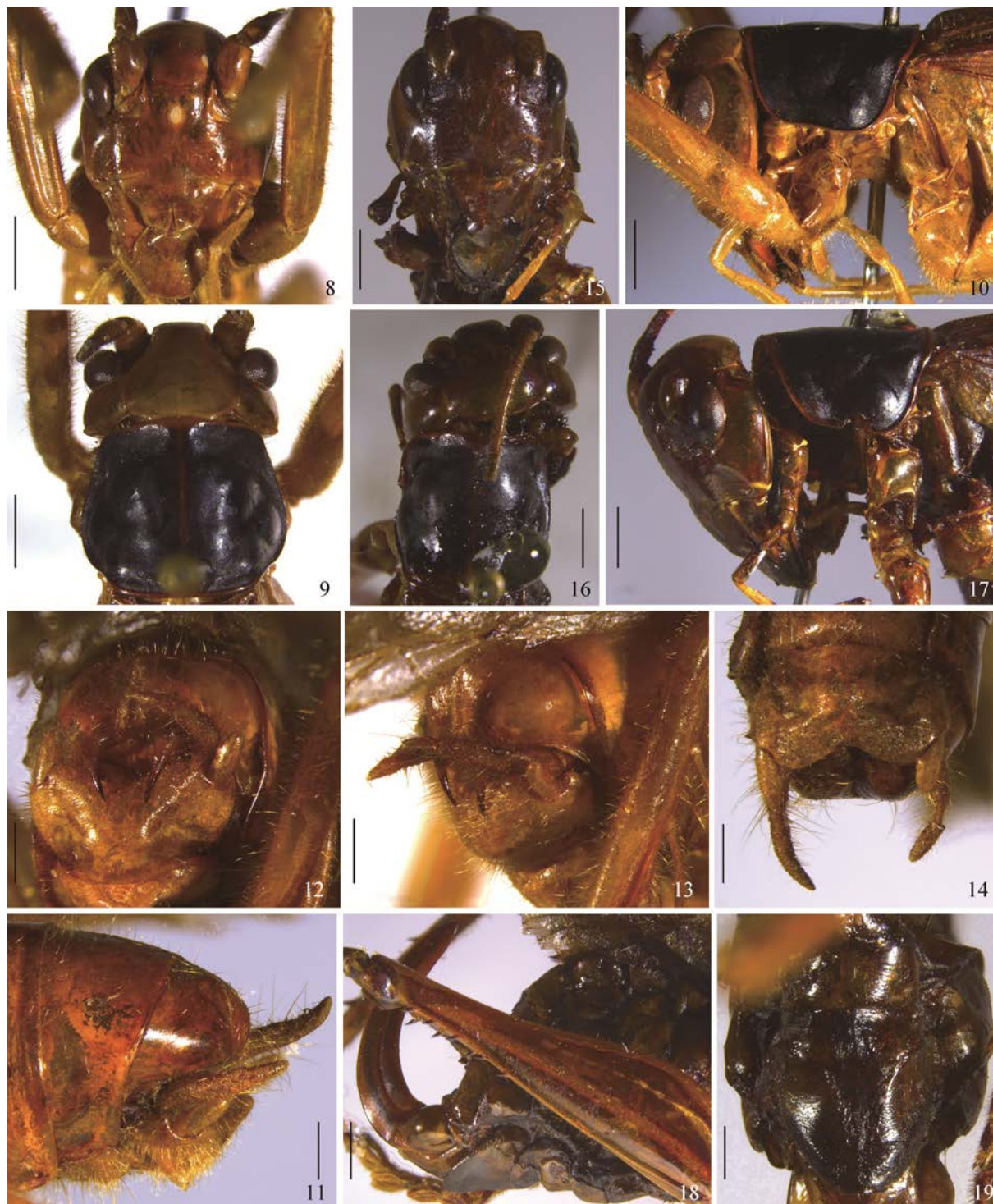


Female. Unknown.

Coloration. Body light brown. Eyes brown. Pronotum dark brown, with narrow yellowish brown edges and 1 wider yellowish brown stripe in the middle of disc. Apices of hooks of ninth abdominal tergite dark brown. Spines of hind tibiae with apices darkish.

Material examined. Holotype ♂, Langping, Chenwanglaoshan, Guangxi, 26 August 2014, coll. Yun Cai.

Measurements (mm). Body 18.8; pronotum 6.3; tegmina 8.7; hind femora 14.1.



Figures 8–19. *Neolarnaca longipenna* sp. nov. 8–14. Male. 15–19. Female. 8, 15. Head, frontal view. 9–10, 16–17. Head and pronotum, dorsal and lateral view. 11–13, 18. Apex of abdomen. 11, 18. Lateral view. 12. Apico-ventral view. 13. Apico-lateral view. 14, 19. Subgenital plate, ventral view. Scale bars: 8–10, 15–18=2mm; 11–14, 19=1mm.

Distribution. China (Guangxi).

Etymology. The new subspecies name refers to the wider brownish stripe of pronotum along the midline.

Remarks. The new subspecies is very similar to *N. vera vera* Gorochoy, 2004, but differs from the latter as following: body smaller, pronotum with yellowish brown stripe along with the edges and 1 wider yellowish brown stripe with the midline of disc. For *N. vera vera* Gorochoy, 2004, pronotum has narrow yellowish stripe along the anterior margin and small spots at the middle of posterior margin.

***Neolarnaca longipenna* sp. nov.** (Figs 8–19)

Male. Slender, both sexes fully-winged. Fastigium verticis broad, about 1.5 times the width of scape, lateral margins not raised (Fig. 8). Frons smooth. Eyes elongate, slightly shorter than the length of scape; ocelli smaller, subcircular. Scape about as long as pedicel and first segment of flagellum combined. Pronotic anterior margin slightly projected medially, posterior margin nearly straight; lateral lobes longer than height with ventral margin undulating (Figs 9–10). Fore coxae with 1 small spine. Fore and median femora unarmed spine on ventral surface; hind femora with 5–6 inner and 5 outer spines on ventral surface; hind tibiae with 5 pairs of dorsal spurs, 1 pair of dorsal apical spurs, 2 pairs of ventral apical spurs and 1 pair of ventral subapical spurs. Tegmina reaching apex of abdomen (paratypes) or slightly surpassing apex of abdomen and reaching the basal area of hind tibiae (holotype). Ninth abdominal tergite with 1 pair of spines pointing downwards and forwards, apices acute (Figs 11–13). Tenth abdominal tergite membranous. Cerci shorter, apical area slightly curved inwards (Figs 12, 14). Subgenital plate wider than long, anterior margin almost straight, posterior margin with 1 obtuse-triangular concavity; styli stout, cylindrical, apices obtuse.

Female. Size slightly larger than male. Basal area of subgenital plate membranous, basal margin almost straight, narrowing, posterior margin narrowly rounded (Fig. 19). Ovipositor short, strongly upcurved; ventral and dorsal margins smooth, apex subacute (Fig. 18).

Coloration. Male body yellowish brown (Figs 8–10), female brown (Figs 15–17). Eyes pale, ocelli nearly white. Pronotum black with yellowish brown edges and 1 narrow yellowish brown stripe in midline (Figs 8, 15). Spines and spurs of hind legs with apices light brown.

Material examined. Holotype ♂, Mao'ershan, Xing'an, Guangxi, 21 September 2011, coll. Xun Bian. Paratypes. 1♂1♀, Damingshan, Shanglin, Guangxi, 18 July 2012, coll. Jinrong Bai.

Measurements (mm). Body ♂ 18.0–21.5, ♀ 24.5; pronotum ♂ 5.2–6.8, ♀ 6.7; tegmina ♂ 17.0–7.3, ♀ 16.5; hind femora ♂ 13.7–14.0, ♀ 15.5; ovipositor 10.3.

Distribution. China (Guangxi).

Etymology. The new specific name refers to the long and well developed wings.

Remarks. The new species differs from *N. vera* Gorochoy, 2004 in following: tegmina longer, reaching or slightly surpassing the apex of abdomen; pronotum with 1 narrow yellowish brown stripe along the midline; posterior margin of male subgenital plate with 1 obtuse-triangular concavity.

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